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Feyerabend's Philosophy of Science and its Implications for National Development in Africa

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ABSTRACT

The thesis of this article is that Feyerabend's philosophy of science, hinged on his pillar of 'anarchism' and 'anything goes' can serve as a challenge for scientific and technological development in Africa. Africa has been largely tagged as 'underdeveloped' because she has failed to chart her own course of scientific development, and has somewhat felt satisfied playing the dependent role. This work agrees with Feyerabend's thesis that knowledge (scientific) is a local commodity designed to solve local problems. Using the textual and contextual methods we contend that every culture, certainly including Africa, can harness her own indigenous scientific categories and develop from her own local perspective. We reason with Feyerabend that Western science is not sacrosanct, nor its method of rationality the only path toward development. The work reveals that Feyerabend's views, though challenging and somewhat intriguing, are very congenial to our African experience. Thus we conclude by adumbrating some positive implications that his views have for the Africans, especially towards scientific and even technological development.

Key words: Feyerabend; Philosophy; Science; African Development; Anything goes; Anarchism

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INTRODUCTION

Any discourse on African development, whether from the economic, political, religious, scientific or philosophical perspective, would always provide an existing challenge and in fact an amazing curiosity. This becomes more evident when the discourse is in relation to philosophic-scientific issues. But much as one strives to negotiate, understand and evaluate such discourse, one would seem to find himself talking more about underdevelopment even more than development. The implication here is that Africa is underdeveloped and therefore, in need of development.

In this contemporary world, science and its application, technology, provide the most important index for distinguishing a developed society, country or continent from an undeveloped one. Africa has been tagged a third world continent because of her underdevelopment status in the sphere of science and technology. The reason is that Africa is mainly dependent on the first world (Western or developed world) in its scientific and technological needs. The corollary here is that scientific categories of the West, in whatever shade or colour, whether it is congenial to the African world view or not – have been imposed or dumped on the Africans. The Africans, satisfied with their dependent status, have sat back and swallowed everything from the developed world without harnessing their own path to development. Based on this demeaning situation, our development rate has often been tied to this dependent status.

The questions then arise: Can the Africans not harness their own mode of scientific development? Must we always follow the Western scientific paradigm? Can we not create alternative knowledge to modern science? Feyerabend's philosophy of science seems to offer some answers to these questions and many more allied ones. Thus in this article I present Paul Feyerabend's philosophy of science: a philosophy of science which challenges the Africans to wake up, develop in their own ways without depending solely on Western scientific paradigm. His philosophy of science anchored on his ideas of 'anarchism' and 'anything goes' suggest that modern science and its method of rationality is not the one and only method for doing science nor the only route to development. The aim of this paper is to dig out those latent or

hidden meaning which Feyerabend's philosophy of science has towards development in Africa.

AN EXPOSITION OF FEYERABEND'S PHILOSOPHY OF SCIENCE

Feyerabend's Background and Influences

It is often said that a philosopher's ideas are to a large extent the offshoot of his socio-cultural milieu and the intellectual ferment of his time. This appears to be true of Feyerabend, a former Professor of philosophy at the University of California and a Professor of philosophy of science at the Federal Institute of Technology at Zurich.

Explaining the origin of his ideas, Feyerabend notes that the problem of knowledge and education in a free society struck him during his tenure of a state fellowship at the *Weiner Institute Zur Methdologiscen Erneuerung Des Deutschen Theaters* in 1946 (Science in 107). Here he studied art and theatre. After a year, he left for the University of Vienna where he studied history, physics and astronomy. He, alongside his other colleagues, founded an organization called 'Kraft circle' named after his class teacher, Victor Kraft, who incidentally became the chairman of the organization. The organization was basically a philosophy club engaged in debates and arguments. Occasionally, it had in attendance such eminent philosophers as Ludwig Wittgenstein, Elizabeth Anscombe, Von Wright, Hollistscher, Julos and many others. In such debates, Feyerabend would defend what looks like the 'absurd view' with great assurance.

Feyerabend notes that Felix Ehrenhaft, whom he called 'an excellent experimenter, unraveled the difficulties of 'scientific rationality' and profusely shaped his critical mind. Ehrenhaft, a teacher of 'theoretical physics', on his visit to Vienna, according to Feyerabend, opened his eyes and held members of the 'Kraft circle' spellbound. The 'Kraft circle' had heard so much about this critic of 'some scientific theories' and had conspired to criticize and 'expose' him for his criticism and rejection of the relativity and quantum theories as being idle speculation; for, this was the theory which the 'Kraft circle' held in absolute reference and had always defended with all their critical might. But when Ehrenhaft visited the 'Kraft circle', he stunned them as he successfully tore apart, not

only the relativity and quantum theories, but the Newtonian law of inertia and the electromagnetic theory. Feyerabend would claim that Ehrenhaft's lesson would later on provide an excellent illustration of the nature and limitation of scientific rationality (111).

In Vienna, Feyerabend also came under the influence of some foremost Marxist intellectuals like Walter Hollister. Though he read Stalin's pamphlet on dialectical and historical materialism, he was more of 'a raving positivist' who favoured strict rules of research. Afterwards, he converted to realism for, according to him, 'realism had fruits positivism had none' (135). Another influence on Feyerabend was Elizabeth Anscombe, a powerful British Philosopher with whom Feyerabend claimed to have discussed Wittgenstein's manuscripts. Feyerabend actually was to become a student in Cambridge under Wittgenstein but the latter died before Feyerabend arrived in England. Karl Popper then became his supervisor and, according to Feyerabend, Popper had 'freedom of manners…joyfully putting forth his ideas, unconcerned about the reaction of the professionals' (150). But he would later remark that the relatively unknown Popper whom he met in 1948 was very different from the 'established Sir Karl of later years'.

Feyerabend in his studies and research in quantum theory found that scientists do not always follow their laid down rules during research, and that falsification of the rationalist was not a solution to the problem of scientific methodologies. By this position the rationalist influence of Popper on him had started to wane. Feyerabend would note that it was Professor Von Weizsacker who had the responsibility for his change to anarchism. Weizsacker made Feyerabend to realize that no idea, knowledge or ideology should be imposed without regard to circumstances, for if this is done, it will be more of a hindrance than help. Influenced by Weizsacker's position, Feyerabend notes;

> … a person trying to solve a problem whether in science or elsewhere must be given a complete freedom and cannot be restricted by any demands, norms, however plausible they may seem to the logician or the philosopher who has thought them in the privacy of his studies (117).

The implication of what Feyerabend says is that every problem has its concrete situation and that no general rule or law formulated by a scientist or logician, no matter how reasonable it may appear, should be generalized to cover problems outside its own universe of discourse.

Another event that prompted Feyerabend to turn his back against rationalism had to do with the manner in which social problems were solved. Those who called themselves 'intellectuals' (a version of the rationalists), or 'policy makers' (what some Nigerians would call leaders of thought), make policies concerning others as if they were their own private affairs. They simply take it for granted that their ideas and those of their colleagues are the only important ones and that people have to adopt them (118). Feyerabend saw in such ideas what he would term as the tyranny of truth or reason.

Given this background, Feyerabend lost faith in the methodologies of science peddled by some of his contemporaries. He rather saw them as hindrances to the development of the individuals and the society at large. He would rather pin his faith in the idea of 'anarchism'. Which he believes could enhance free exchange of ideas and development.

FEYERABEND'S CRITIQUE OF LOGICAL POSITIVISM, CRITICAL RATIONALISM AND KUHN'S HISTORICAL AND REVOLUTIONARY MODEL OF SCIENCE

Before presenting his anarchistic view of science, Feyerabend pointed out the loopholes inherent in other methodologies of science as put forward by the logical positivists, critical rationalists and Thomas Kuhn.

Taking on the logical positivists whose major tenet was the 'verification principle', Feyerabend contends that theories do not always follow from facts in the strict sense as held by them (logical positivists). They had held that propositions which cannot be verified are meaningless and should be thrown out from the corpus of knowledge. Their aim was to demarcate science from non-science, since according to them, non-scientific propositions could not be verified through observations. But Feyerabend explains in his 'Science without Experience' that observational knowledge is not the most reliable knowledge that human being possess (794). In this vein, Feyerabend would say that science is just one tradition

among many. It is closely related with other traditions and cannot be wholly separated from them, for it does profit from an admixture of unscientific ingredients (Against, 305). For him, the attempted separation of science from non-science is not only artificial but also detrimental to the achievement and growth of science.

Feyerabend's attack on Critical Rationalism as propounded by Karl Popper was always devastating and revealing. Critical rationalism was an offshoot of logical positivism. The aim of critical rationalism as Uduigwomen explicitly states, was to 'provide the criteria for distinguishing critical and rational thinking, behaviour and actions from uncritical and irrational thinking, behaviour and actions' (87). The method which Popper felt was good for this task was 'falsification'. In the falsificationist methodology, theories are made to undergo some test of reasoning and if they cannot stand up to the critical test, such theories are jettisoned. According to Popper, it is a method of 'trial and error – of conjectures and refutations' (46).

But Feyerabend holds that Popper's standard was too rigid and fixed, and that if it were to be strictly applied, then, science itself would be wiped out without ant suitable replacement (Against, 176). To drive home his point, Feyerabend states that it is meaningless to give a negative criterion (conjectures and refutations or falsification) by saying that good theories are theories which can be refuted, but are not yet contradicted by any fact. In his words:

> A principle of falsification that removes theories because they do not fit the facts would have to remove the whole of science…facts alone are not strong enough for making us accept or reject scientific theories, the range they leave to that thought is too wide. Logic and methodology eliminate too much….(303)

By implication, what Feyerabend is saying is that knowledge of reality cannot be limited to observational facts and cannot be exactly measured by a given privileged method or standard. Rigid test by verification, logic or scientific rationality as reveled in by modern science and worshipped by the rationalists and positivists would, if strictly applied, mean that we may be unable to find anything that could live up to those standards.

For Imre Lakatos, whom Newton-Smith sees as 'the revisionary Popperian' (77), Feyerabend gave some little respect. According to Feyerabend, Lakatos does not stipulate methodological rules that direct the scientists to either retain or reject a theory. For Feyerabend, Lakatos' 'Scientific Research Programme' is more superior to Popper's and Kuhn's approaches of science. Lakatos, for him, 'only offers words which sound like elements of methodology but not methodology…' (How to Defend, 161). For these reasons, Feyerabend sees Lakatos as a follow anarchist. However, Lakatos could not entirely escape his critical sledgehammer. He criticizes Lakatos on the ground that he takes or upholds science against other disciplines as if modern science is superior to magic or myth. He maintains that science is only one ideology among several others.

On Kuhn's Revolutionary method of science, Feyerabend says, 'Kuhn's ideas are interesting, but alas, they are much too vague to give rise to anything, but lots of hot air' (160). He sees Kuhn's notion of 'paradigms', 'normal science', 'crisis', 'revolution', etc., as boring and in fact, connected with no ideas at all. Generally, Kuhn's idea, according to him, is false, for there has never been such a period of normal science in history. He challenges anyone to prove the contrary (160).

The foregoing is a strong indication that Feyerabend did not favour any method of science that was couched in fixed and unchanging rules. Science, therefore, according to him, could only thrive through the anarchistic route. We shall then move to consider his anarchistic notion of science.

FEYERABEND'S ANARCHISTIC CONCEPTION OF SCIENCE

Feyerabend's view of how science should progress is based on the idea of 'Anarchism'. He opens the introductory chapter of his Against Method by stating that 'Anarchism' though not 'the most attractive political philosophy is certainly excellent for epistemology and philosophy of science' (17). His idea of anarchism is predicated on his rejection of the idea that science can, and should be run according to fixed universal rules. He was simply opposed to a certain method of science which involves firm, unchanging and absolutely binding principles for conducting the business of science; i.e. the idea of a fixed theory of rationality. He argues that the idea of a fixed method, or of a fixed theory of

rationality rests on too naïve a view of man and his social surroundings (27). He rejects universalism because this would inhibit the liberty of man in leading a full and rewarding life, and may even inhibit man's ways of discovering the secret of nature. For him, all the methodologies peddled by philosophers and scientists have their own limitations. He discovers that all important physical principles rested on methodological assumptions that are even violated by scientists in the course of research and propagation of theories. For him, the only rule that does not inhibit development is 'anything goes'. However, he is apt to warn us that by this principle he does not recommend it as 'the one and only principle of a new methodology' (39). The principle of 'anything goes' implies that neither science is the only form of knowledge that has the sole right of interpreting realities nor its method of rationality the only route to knowledge. In view of this, he notes that science is not sacrosanct; nor is it possible and, in fact, necessary for it to be demarcated from myth, religion, voodooism, astrology, witchcraft and so on. Rather, science benefits from these categories in its interpretation and explanation of phenomena.

Feyerabend's idea of anarchism and his principle of 'anything goes' have been variously attacked by many scholars. For example, it has been argued that, in a society where 'anything goes', the principle that will be at work is 'everything stays'. Besides, his comparison of science with myth, voodoo, witchcraft, astrology and the like has been regarded as 'unholy; (Uduigwomen, 118). Again, it has been held that Feyerabend's anarchistic ideas (as a post-modern albatross) would imply that where 'everything goes, nothing goes, for anarchy and disorder would easily become the order of the day' (Ozumba, 51).

But it seems to me that these attacks on Feyerabend sometimes arise from the misconception of his usage of the term 'anarchism' and the phrase 'anything goes'. If we consider 'anarchism from its etymology 'anarchos', meaning, 'without a chief or head' or 'without a top authority', (Sylvan, 218), we would see that Feyerabend's usage might have been in this sense. In this sense, anarchism implies decentralization. It does not revel in an arrangement structured with a controlling centre. Relating this to science, we would see why Feyerabend said that science should be dethroned from the top pinnacle and made to occupy the 'ordinary

field' like every other forms of knowledge. And also that it should not be made to swallow other traditions up by presenting it and its paradigm of rationality as the absolute and universal standard of understanding realities. On the question of 'anything goes', Feyerabend, we believe, could not have used it to mean that even diabolical forms of knowledge, which possibly could lead to the extermination of humanity, should be expressly encouraged or allowed. Thus, when he states that 'knowledge is a local commodity designed to satisfy local needs and to solve local problems…' (Farewell, 28), he implies among other things that, each 'locality' has its own standard of justifying knowledge and perhaps the ability of developing itself. The idea here is that if any knowledge claim does not meet up to standards of justification in the locality it springs from, and cannot satisfy or solve the needs and problems, then it should not be taken seriously. If this is so, then it follows that not 'everything stays' even though 'anything is allowed to go' in order to prove how it can solve human problems.

Following his idea of anarchism and anything goes, is Feyerabend's idea of proliferation of theories or ideas. This was in opposition to the 'consistency principle' of science. Scientists have always held that any new hypothesis or discovery should cohere or be consistent with already established theories. But for Feyerabend, this is very unreasonable because this condition would always preserve the older theories and not a better one. It would bring about a uniformity of individuals. He, however, argues that scientists normally go against this principle, yet it has always been taken for granted. Having recognized the problem of 'consistency principle', he rather calls for proliferation of theories. For him 'proliferation of theories is beneficial to science, while uniformity impairs its critical power: Uniformity also endangers the free development of the individual' (Against, 35). Feyerabend's call for proliferation of theories hits hard on Popper's recommendation of single theories as a unit of appraisal. His position is rather in line with Kuhn's. Kuhn accepts a situation where there are many competing theories struggling to win general acceptance during what he calls the pre- paradigm or crisis period of science

On the idea of incommensurability, Feyerabend opposes the view of the rationalists. For them, a set of principles could be articulated for objective assessment of the relative merits of rival theories against a given background of evidence by way of comparing the

theories. In other words, the rationalist's position is that theories can be compared through their respective content classes. But Feyerabend's contention is that the logical relations of inclusion and overlap, which are required for such a comparison, cannot always be established between the content classes of competing theories. Such theories are incommensurable, and between them, no rational choice is possible. Here, he gives an example that the Newtonian mechanic is incommensurable with relativistic mechanics, on the ground that the later suspends a universal principle of the former, that shapes, masses, periods are changed only by physical interactions (271).

Feyerabend's position again appears to be similar to that of Kuhn. For Kuhn, during the revolutionary period of science, the new paradigm is usually incompatible and incommensurable with the old paradigm. The implication here is that any theory differs in meaning in respect to its epoch and what it sets out to prove. Feyerabend holds that the meaning of every term depends upon the theoretical context in which it occurs.

On the concept of rationality, Feyerabend observes that scientists and some philosophers have blurred the original meaning of the term. Though he accepted that it is good to be rational, he did not accept the kind of rationality peddled by the scientists and intellectuals of his day. The common idea was that rationality was a universal criterion which every form of knowledge or tradition has to pass through in order to be accepted as legitimate knowledge. It was this conviction that science is the only rational enterprise that drove Popper and the positivists to seek a demarcation criterion that would distinguish science from non-science.

Rationality is a word derived from reason. Thus, for a person to be said to be rational, he must be seen to be capable of making decisions and judgment based on reasons rather than emotions. Aristotle professed the universality of rationality when he said that man is by nature rational. However, rationality came to achieve formal, deductive and inductive rules. Aristotle, who had declared that 'all men are rational', became the first philosopher to systematize all forms of positive thinking which culminated in formal logic – the acclaimed cannon of science.

In relation to this trend, Feyerabend talks of a 'new kind of knowledge' (rational) that arose in Greece and later on led to the sciences (Farewell, 73). Feyerabend here refers to rationality as theorized by those he calls 'the founders of Western Culture' namely, Aristotle, Descartes, Newton, Kant, Russell, Popper and Lakatos (Rationalism, 9). This form of rationality, which he regards as 'Naïve' simple means acceptance of certain procedures (rules, standards) together with the results of these procedures, rules and standards. He further notes that according to Western tradition, this idea of rationality does not mean 'acceptance of views except in so far as the views emerge from the application of the procedures, rules, standards' (8). In this regard, one becomes rational if and only if one's knowledge conforms to these general rules and standards.

Feyerabend is against this idea of universalism. For him, any 'rational' procedures or valid standards that run counter to socio-logical and psychological tendencies, and that do not belong to any traditions are hopeless (14). What Feyerabend is saying is that rationality is defined by tradition or society. Each tradition may have its own rationality. In this light, there cannot be one general or universal standard of rationality to which all other forms of life, culture or knowledge systems must conform. Hence, for him, 'there is not one rationality, there are many and it is up to us to choose the one we like best' (16).

Feyerabend's relativistic view here was probably a replay of Peter Winch's alternative criteria to the Western type of rationality. Winch states:

> The criteria of logic are not a direct gift of God, but arise out of, and are only intelligible in the context of ways of living or modes of social life as such… science is one such and religion is another; and each has criteria of intelligibility peculiar to itself (100).

The point Winch is making is that there is no independent or absolute standard (rationality), which is compelling on all men, and which can, therefore, be used to measure different forms of life or knowledge systems.

If science deals with the explanation and prediction of phenomena, and the way the Africans conceive of, or reason about these realities are different from Western's conception, then it

cannot be the case that, the logocentric (logic-centred) form of rationality (Western) world would be compelling on the Africans. In such a situation, we can see reason with Feyerabend's conception of rationality and his philosophy of science in general could give Africans the leverage to finding an alternative path for development, thus complementing the efforts of modern science.

Feyerabend yearns for a free society where all where all traditions, including science, can be made to have equal right and equal access to the centre of power (Science, 106). He wonders why there should be separation between state and religion, state and other forms of knowledge, but there is no separation between state and science. He notes that in America, for instance, a citizen can choose the religion he likes, yet he is not permitted to demand that his children learn magic, legend or astrology rather than science. He frowns at how the government spends more of its resources on the improvement of science without doing the same for other traditions. Science, he maintains, is just one ideology among many others in the society and should be treated as such.

FEYERABEND'S PHILOSOPHY OF SCIENCE AND THE BANE OF NATIONAL DEVELOPMENT IN AFRICA

It is a fact that Africa is underdeveloped, hence in need of development. Underdevelopment here does not mean absence of development. This, according to Rodney, is because 'every people have developed in one way or another and to greater or lesser extent' (21). Underdevelopment is, therefore, understood when we compare the levels of development between societies, nations or continents.

At this point, we define development along with McGurk as 'the advancement or improvement over some primitive status' (28). Considering this definition, it is a fact that Africa cannot be said to have remained in her 'primitive status', Africa has actually gone through some levels of development. But when this is compared to the developmental strides in the Western world, especially in terms of science, technology and education, we certainly would agree that we are underdeveloped.

In her quest for development, Africa has seriously been influenced by the Western paradigm of development, which hinges on the purely rational/scientific outlook. Many have even argued

that Africa can only develop if it discards her cultural and primitive scientific categories. For example, Wiredu in his *Philosophy and an African Culture* advocates the application of the method and result of modern science for the improvement of the condition of human life (43). This involves, according to him, the discarding of certain superstitious beliefs and customs that inhibit scientific growth. In view of this he advocates an education blueprint where the 'rational, analytical and scientific orientation' is propagated (15). He opines:

> 'Our children should be initiated early in life into the discipline of formal and informal logic and into the methodology of rational thinking…, the kind of training that will produce minds… capable of logical analysis and fully aware of the nature and value of exact measurement' (15-16).

> We quite agree with Wiredu that modern science is an important agent for national development in Africa. We may also agree with Wiredu that certain traditional cultures may inhibit African development. But this is not enough reason to claim that the logocentric rational methodology of the West is the only paradigm of interpreting phenomena; nor is it the only route to harnessing the path of development.

Feyerabend as we stated earlier, was against such imposition of the methodology of modern science (as Wiredu seems to do). This, according to Feyerabend, would blur or impair the free development of the indigenous outlook of the people. This is exactly what is happening to Africa. Before the advent of the modern science and its application – technology, the Africans had ideas on how to brew beer, distil local gin, preserve corpses, weave clothes, make pots of different shapes, colours and sizes, build houses, make astronomical observations, heal diseases of different types through herbs and roots, rear cattle and do so many other things. But what has happened to these indigenous scientific traditions today? Some of them have been lost because of the influence of 'Western scientific paradigm'. The result is that Africa has been derided as an underdeveloped continent because it has failed to build on those 'ancient civilizations' strides. It has, rather, caved in under the Western influence. Ivan Sertima, writing on the Lost Sciences of Africa, rues the African situation by stating that even though it has been discovered (in the past few years) that Africa had great scientific traditions, ' it is quite clear that the finest

heart of the African world receded into the shadow while its broken bones were put on spectacular display' (26). The implication of this is that African glorious-scientific achievements of the past are not recognized because its dependence and underdeveloped status have overwhelmed such achievements..

The implication of Feyerabend's philosophy of science for African development, following the above thinking, is that we should re-examine our attitudes towards such scientific traditions of the past and perhaps build from that to create indigenous scientific and technological traditions like the Chinese, Indians and Japanese have successfully done. This is why he challenges that 'primitive thinkers showed greater insight into the nature of knowledge than their enlightened philosophical (scientific) rivals. It is, therefore, necessary to examine our attitude towards… all those ideas which rationalists would like to see forever removed from the surface of the earth' (Against, 298-9). Professor Nyong'o in his lecture 'Technology, Culture and National Development in Africa' quoted Professor Bassey Andah as saying that our traditional and technological systems were and still remain viable on which we can build our future (19). This, according to him, means that these systems were compatible with local cultures.

Another implication of Feyerabend's philosophy of science is that it challenges Africa to develop alternatives to scientific knowledge of the West. Feyerabend repeatedly (in fact, in almost all his writings) says that neither science nor its method is the only form of, or paradigm to genuine knowledge. In his *Three Dialogues on Knowledge*, Feyerabend says that one has to find different methods to obtain different kinds of knowledge (57). The implication here is that there cannot be one fixed method for doing science. That is why he explains in his 'How to be Good Empiricist' that though empiricism has been taken as the core of the sciences (3), it will be futile to attempt to make it (empiricism) a universal basis of all our factual knowledge (8).

Feyerabend's position here lends credence to some trado-medical sciences in Africa. For example, K. Ojong tells us of traditional orthopaedic practice in Yala and Boki areas of the northern part of Cross River State of Nigeria. Here, they use both the metaphysical and empirical knowledge to treat fractured or broken bones. In treating a fractured bone, the traditional orthopaedic doctor would

proceed by breaking the leg of a cockerel (if he is treating the fractured leg of a male patient) or the leg of a hen (if he is treating the fractured leg of a female patient). As he 'sets' or treats the leg of the cockerel or hen, and as soon as it gets well, the male or female human patient would, correspondingly, become healed (174). The significant thing here is that the 'orthopaedic doctor' may not even get to touch the legs of the human patient involved. What he does is just to treat through a medium, which the traditional Africans call 'forces'.

The fact is that this type of medicine certainly defies explanation in Western logic and scientific rationality. The Western-minded scientist may be left to wonder about the relationship between cockerel or hen and the human patients, or how the medication on the cockerel or hen is transmitted to the human beings without any visible contact. Meanwhile, we should note that Feyerabend seems to give credence to this type of medicine when he states that '…some forms of tribal medicine may have better ways of diagnosing and treating (mental and physical) illness than scientific medicine of today' (Science, 9). It is true that such forms of traditional medicine abound in Africa. But the problem is that they are not carried out on such a large scale as to give Western medicine a serious challenge. However, it is also true that when measured against the logic of modern science, such traditional medicine would readily be seen to be fraught with some mysteries. Though we should encourage research into these types of medicine, it does not mean that the rationality of modern science or its method must be imposed on them. The major concern should be whether it can solve human problems without causing any nuisance. If it does, then such medicine and the like should be encouraged. We think it could provide alternatives to modern medical treatment such that everyone can make a choice where and what form of treatment he is to receive. Besides, the profession of the traditional healers would be boosted. This can then take care of the spiritual needs, social needs and even physical needs of the wider range of people in the continent.

Following the above viewpoint, we can point out another implication of Feyerabend's philosophy of science for African development. The implication is that the government should be ready to provide funds for researches and development of 'ethno-science' (local sciences). It is a known fact that most Africans do

not give the same support to 'local sciences' as they do to modern science. Feyerabend frowns at the situation where modern science and the state work closely together while other forms of knowledge are left alone to lick their wounds. He notes that while scientific subjects are compulsory subjects in schools, no interest is shown by government in such subjects as astrology, magic, legends, myths etc. yet, science benefits a great deal from these non-scientific subjects. In short, he would want these forms of knowledge to also have free and equal access to the seat of power (106).

Nevertheless, sound as Feyerabend's challenge above may appear, the problem in most African countries is whether the custodian of this 'ethno-science' will be willing to carry out, or aid such researches and at least make the result known to government and the public or not. The concomitant questions are: will the traditional healer open up on his secrets? Will the bone setter (such as we mentioned above), let us know how his medicine, for example, on the broken leg of cockerel or hen lead to an effective cure of human patient? Will the traditional rain-maker tell us the secrets of how he can send down the rain or stop it, or how he can relocate thunder to specific targets? (Alozie, 9). The above posers lead us into the problem of secrecy in ethno-science in Africa, a major problem that has demeaned local sciences. This is why Kwame Gyekye notes that the refusal of the custodians of the verities and secrets of nature to open up on how they achieve their feats has led to the demise of what could have passed for credible scientific knowledge on the death of such 'custodians'. According to him, this is why the development of science has stagnated (30).

Gyekye's observation is quite correct. Even in this contemporary world, it is not uncommon to see an African traditional healer being so esoteric and personal about his knowledge claims, such that on his or her death, such knowledge would just evaporate into thin air. To stop this ugly trend, it is government's place to call the custodians of such knowledge and make provisions for these subjects to be taught in schools. In fact, the custodian of such ethno-sciences should even lead the charge for sciences to be introduced in schools. After all, Feyerabend says in his *Science in a Free Society* that in any democratic society, the citizen has a say in what should be taught in schools, whether folk-medicine, astrology or voodooism, etc (86). The implication of this is that the citizens of such a society would have seen the usefulness of such forms of

knowledge in the development of their spiritual and material well being. If this is done, we believe that such forms of knowledge will be properly projected. Thus, we will be talking about 'exotericization' of knowledge rather than 'esotericization'. This of course, is one important implication of Feyerabend's philosophy of science for African development.

Apart from the above, another implication of Feyerabend's philosophy of science is that he encourages a shift from logocentricism to functionality. This means that the justification of scientific knowledge should no more be based on whether it conforms to the logic and rationality of modern science or not, but whether it can solve human problems. This is why he states in *Farewell to Reason* that knowledge (science) is a local commodity designed to satisfy local needs and to solve local problems (28). This means that Africans can build their own mode of scientific development instead of being over dependent on the paradigm of the Western world.

Furthermore, Feyerabend's philosophy of science poses a serious advice to African nations to be wary of the kind of technology and science they import into the continent. The fact is that not all scientific and technological knowledge is congenial to the African world view. It is a fact of life that some of these imported technological devices have more or less help to erode or reduce our moral value to a near zero mark. The Africans, at least, in the traditional setting, are known to be highly superior in morals than their counterparts. But what are we seeing today? Some Africans have gone haywire in perpetrating acts of immoralities because of influence of modern science and technology. This is why Feyerabend in his *Three Dialogues on Knowledge* explains that Western civilization (science) 'may have done some good here and there, for example, in the restriction of infectious diseases – but the blind assumption that Western ideas and technology are intrinsically good and can therefore be imposed without any consultation of local conditions was a disaster' (74).

Indeed, one can only be left to reflect on the moral disaster we have been plunged into by jumping into, or swallowing everything Western, as far as it is scientific and technological. Apart from this, many African countries are involved in the attempt to develop through inappropriate and incongruous technology as a result of

what Professor Nyong'o calls 'Apish imitation and misuse of resources'. He cites an example of where an American firm was contracted by Kenyan Government to expand a sugar mill without giving adequate thought to its peculiar environment (which include physical, social, cultural and even economical). Though the expansion has been carried out, 'not a single extra ton of cane had been processed through the factory' (20). According to Nyong'o, the reason is that: 'The wheels of the tractors were so big that they could neither travel on the access roads in the farms nor could they fit on the bridges!' Today, according to him, 'The tractors and all other machines lay in the compound that now looked like a cemetery of abandoned metals' (20). This is the malady in African countries: Blind imitation without adequate learning!

CONCLUSION

The foregoing discussion was an attempt to draw out the implications of Feyerabend's philosophy of science for African development. We have found out that the Africa's over-dependence on the Western paradigm has to some extent impaired the Africans from developing through their own indigenous mode. This is not to say that modern science, as projected by the West, does not contribute African development. It does, but it has its own loopholes when we place it side by side with the African view of the world. This is why we corroborate Kanu's position that Feyerabend's philosophy of science could provide a 'philosophical blueprint' for African development, since it challenges Africa to use its resources (as based on their own view of the world) to build her own scientific and technological empire instead of over-dependence on the West (6-9).

The important fact about Feyerabend's philosophy of science is that it is not an exclusivist philosophy, especially when compared with other philosophies of science. His philosophy of science takes into consideration a people's view of the world and their existential conditions to the extent of challenging them to develop from their local perspectives. This challenge based on his philosophical pillars of 'anarchism', 'anything goes', 'proliferation of ideas', 'rationality' and many others mentioned in this work attest the

humanitarian, liberal and emancipator nature of his philosophy of science.

In the light of this discussion, it is our thinking that Feyerabend's ideas are veritable pointers to the way Africa can develop by not being swallowed up by Western paradigm, but in complementary effort with the achievements of modern science. Such a situation can lead to a greater rate of development in Africa.

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